

# **EPA Begins Dredging Harbor This Fall**

**Outboard Marine Corp.** 

Waukegan, Illinois

September 2012

## For more information

If you have questions or want to learn more about the OMC, you can contact these team members:

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### Site-related documents

Waukegan Public Library Reference Desk 128 N. County St.

Waukegan

EPA Record Center 77 W. Jackson Blvd., 7th Floor Chicago

8:30 a.m. – 4:00 p.m., weekdays

Certain EPA information, including this fact sheet, can be reviewed electronically at: www.epa.gov/region5/cleanup/outboardmarine.

An administrative record, which contains detailed information upon which the selection of a cleanup plan is based, is also available at the Waukegan Public Library and at EPA's Chicago offices.

The U.S. Environmental Protection Agency and partner Illinois Environmental Protection Agency will use two hydraulic dredges to clean up Waukegan Harbor in a sediment removal project scheduled to begin this fall. Between 153,000 and 182,000 cubic yards of contaminated sediment (mud), with polychlorinated biphenyl (PCB) concentrations greater than 1 part per million, will be removed. The cleanup will clear the way for the harbor to be delisted as a Great Lakes Area of Concern (see detail on page 3) and perhaps stimulate the lakefront area redevelopment projects envisioned by local officials. Dredging is planned for two seasons and will begin in late September, be shut down over the winter, restart in May, and end during the summer of 2013. Dredging will take a total of about 120 days. The use of the harbor and public beach will not be affected during any of the dredging operations.

Many of the boat slips in the harbor's North Marina (just north of "Government Pier") have been removed to better dredge in that area. One of the two hydraulic dredges will operate there. The sediment that must be removed is thickest in this location. The second hydraulic dredge will start working in the entrance channel (near the city water plant) and gradually move into the harbor. Each dredge will be equipped with an 8-inch, swinging cutter-head that will carve out sediment from the harbor bottom of the harbor. The hydraulic dredges will then mix the sediment with harbor water to create a slurry consisting of both sediment and water. Together, the two dredges will generate slurry consisting of about 15 percent solids and 85 percent water. This slurry will be pumped out of the harbor at a rate of about 1,800 gallons per minute and over to the former Outboard Marine Corporation (OMC) Plant 2 site for processing. (OMC Plant 2 is considered to have been the source of the PCB contamination in Waukegan Harbor.) Once pumped over to the Plant 2 processing area, the dredged sediment will be placed in an 8-acre consolidation facility located on the north end of the site.

# Slurry processing

The slurry pumped to the Plant 2 site will first be processed to separate the water from the sediment. The mixture will initially pass through a rotating screen, much like a wire basket, to remove material larger than one-eighth of an inch in diameter. The slurry will then flow into an equalization tank to be chemically conditioned. Next, it will be pumped into a gravity thickener to concentrate the sediment solids.

The remaining sediment-slurry will then be pumped into large fabric tubes at the consolidation facility. These tubes will trap the sediment but allow the remaining water in the sediment to drain and be collected. Both the large amount of water that is initially separated from the solids in the gravity thickener, and the residual water collected in the consolidation facility, will be treated before it is discharged back to the harbor. As part of the treatment process, the water will be tested frequently for cleanliness before



Harbor Overview Showing Dredging Barges and Sediment Processing Facilities

it is discharged. Harbor water will also be mixed into the discharge water to lower the concentration of ammonia being released at the discharge point.

# **Continuous dredging**

Dredging operations will be conducted 24-hours a day, five days per week. Dredging system maintenance will be conducted during the other two days of the week. Floodlights placed around the consolidation facility and in the harbor will enable dredging to continue at night.

Some contaminated sediment located very near to the walls of the harbor cannot be removed without damaging those structures. Therefore, a cap will be installed to cover this sediment. The cap will consist of a special fabric layer over the sediment and placing a mat of concrete blocks on top of it. These measures will make sure these areas remain secure even when large boats operate in the harbor. When the harbor cleanup is finished, the treatment plant will be dismantled for recycling and the consolidation facility will be covered with a clean soil layer and seeded.

# **Background**

The OMC Superfund site is located in the northern Waukegan Harbor area in Waukegan, Illinois. The

100-acre OMC site is the former location of an outboard boat motor manufacturing plant and a former railroad tie, coal gasification, and coke plant facility. OMC declared bankruptcy in December 2000 and abandoned its manufacturing plant in 2002. The city of Waukegan purchased the Waukegan Manufactured Gas and Coke Plant (WCP) site and the OMC Plant 2 property from the bankruptcy estate as part of its plan to revitalize its lakefront. Due to its large size, U.S. EPA divided the site into four cleanup parcels: Waukegan Harbor, the WCP site, PCB-containment cells, and OMC Plant 2.

Contaminants of concern at the OMC site include PCBs, which the business used in hydraulic fluids at its boat motor manufacturing plant, and trichloroethene (TCE), a chlorinated solvent it used to degrease newly made parts. PCBs are found in Waukegan Harbor and on the OMC Plant 2 site and TCE is found in the groundwater under the OMC Plant 2 site. Groundwater is an environmental term for underground supply of fresh water. The WCP site has a different set of contaminants caused by the former manufactured gas plant and coke plant operations. Pollution at the WCP site includes tars, creosote, arsenic, ammonia, and phenol found in soil and groundwater and cleanup is nearly completed there.



Treatment and Consolidation Facilities on the former OMC Plant 2 Site

Land use in the immediate area of the OMC site is marine recreational and industrial. Several large industries in the area use Waukegan Harbor to receive raw materials from cargo ships. The city of Waukegan has a public beach on Lake Michigan southeast of the WCP site. Once the WCP and OMC Plant 2 properties are fully cleaned up, the city plans to use that land to construct town homes, condominiums and shops.

# Waukegan Harbor

OMC first cleaned up Waukegan Harbor in 1992 by dredging PCB-contaminated sediment from the northern harbor extension area. However, EPA determined in 2009 that more dredging was needed to remove residual PCB contamination. The dredging project that is the subject of this fact sheet is expected to accomplish this and advance the cause of delisting Waukegan Harbor as a Great Lakes Area of Concern.

For more information about the Waukegan AOC, visit the EPA's website at www.epa.gov/glnpo/aoc/waukegan.

General information about AOCs and the Great Lakes can be found at the following websites:

www.epa.gov/glnpo/aoc/

www.epa.gov/glnpo/

### **Great Lakes Areas of Concern**

The Great Lakes, the largest system of fresh water lakes in the world, are shared by the United States and Canada. They make up 95 percent of the surface freshwater in the contiguous United States and have 10,000 miles of coastline (including connecting channels, mainland and islands) — more than the contiguous United States' Pacific and Atlantic coastlines combined. The lakes are a system of transport and shipping, as well as a place of recreation.

Great Lakes Areas of Concern are designated geographic areas within the Great Lakes basin that show severe environmental degradation. There are a total of 43 Areas of Concern - 26 are in the United States, 12 in Canada, and five shared by the two countries. Waukegan Harbor is the only Area of Concern in the state of Illinois.

An Area of Concern must have at least "one beneficial use impairment which means that it has undergone a change in its chemical, physical, or biological integrity of a water body." These include:

- restrictions on eating fish and wildlife
- tainting of fish and wildlife flavor
- degradation of fish and wildlife populations
- fish tumors or other deformities

- bird or animal deformities or reproduction problems
- degradation of benthos, the organisms living at the bottom of body of water
- · restrictions on dredging activities
- undesirable algae caused by eutrophication, which is the over enrichment of water by nutrients
- drinking water restrictions, or taste and odor problems
- · beach closings
- degradation of the look and feel of the environment (known as aesthetics)
- · added costs to agriculture or industry
- degradation of tiny plants (called phytoplankton) and tiny animals (called zooplankton) that make up plankton, the microscopic organisms that float freely in bodies of water
- · loss of fish and wildlife habitat

The beneficial use impairments at Waukegan Harbor include restrictions on fish consumption and restrictions on dredging activities. In October 2011, EPA Administrator

Lisa P. Jackson announced that Waukegan Harbor was one of the nine AOCs in the United States targeted for cleanup and delisting by 2014 under the Great Lakes Restoration Initiative. The harbor cleanup will address these beneficial use impairments and allow Waukegan Harbor to change from an Area of Concern to an Area in Recovery and eventually be delisted.

Environmental cleanups can be very costly. Once all cleanup actions are completed at all the OMC sites in Waukegan, EPA estimates that at least \$140 million will have been spent by public and private parties to restore the sites:

OMC Waukegan Harbor site cleanup action (1990-1993) - \$21 million

EPA cleanup actions at OMC Plant 2 site (2000-2015) - \$44 million

General Motors and North Shore Gas cleanup actions at WCP site (1992-2012) - \$30 million

EPA Waukegan Harbor site cleanup action (2002-2014) - \$45 million

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# EPA Begins Dredging Harbor This Fall

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United States Environmental Protection Agency

